



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/622,565

07/18/2003

Abhijeet Gole

112056-0098

4816

24267 7590 07/22/2008
CESARI AND MCKENNA, LLP
88 BLACK FALCON AVENUE
BOSTON, MA 02210

EXAMINER

HUSSAIN, TAUQIR

ART UNIT

PAPER NUMBER

2152

MAIL DATE

DELIVERY MODE

07/22/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/622,565	Applicant(s) GOLE ET AL.	
	Examiner TAUQIR HUSSAIN	Art Unit 2152	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 04/22/2008 has been entered.

Response to Amendment

2. This office action is in response to amendment /reconsideration filed on 04/22/2008, the amendment/reconsideration has been considered. Claim 15 have been amended, claims 33-35 have been newly added are pending for examination, the rejection cited as stated below.

Response to Arguments

3. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Specification

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d) (1) and MPEP § 608.01(o). Correction of the following is required: Claims 33-34 recite "specific cluster partner **before a higher virtual interface layer** has"There is no support found for the phrase "before a higher virtual interface layer" in the specification.

Drawings

5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “attempting a first remote direct memory access read operation directed to a predefined hardware address and predefined port address number, the predefined hardware address and the predefined port number previously known to support a RDMA operations” in claims 15-18, 20, 24, 28 or “read operation directed to a specific cluster partner before a higher virtual interface layer has fully initialized, using a specific port number and specific address that support a RDMA operations and performing a second.....” in claim 33 and 34 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New

Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 33 and 34 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims reciting “specific cluster partner before a higher virtual interface layer has fully initialized” is not found in original set of claims or in the specification and will be considered as new matter.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 10, 11 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10. As to claim 10, recite “a cluster connection manager **adapted to** initiate.....” The phrase “adapted to” renders indefiniteness in its entirety as it is not sure whether it will

Art Unit: 2152

perform the claimed function or will not perform the claimed function, therefore, require a correction.

11. As to claim 11 and 12 applicant has invoked 112 sixth paragraphs by claiming "means for" limitation which is not specifically referred to any specific embodiment in the disclosure or specification. 35 U.S.C. 112, sixth paragraph states that a claim limitation expressed in means-plus-function language "shall be construed to cover the corresponding structure...described in the specification and equivalents thereof." "If one employs means plus function language in a claim, one must set forth in the specification an adequate disclosure showing what is meant by that language. If an applicant fails to set forth an adequate disclosure, the applicant has in effect failed to particularly point out and distinctly claim the invention as required by the second paragraph of section 112." *In re Donaldson Co.*, 16 F.3d 1189, 1195, 29 USPQ2d 1845, 1850 (Fed. Cir. 1994) (in banc).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cradock et al (Pub. No.: US 2003/0061296 A1), hereinafter "Cradock" in view of Prakash et al (Patent No.: US 6434,626 B1), hereinafter "Prakash".

14. As to claim 15 Craddock discloses, the invention substantially, including, (a) attempting a first remote direct memory access read operation directed to a predefined hardware address and a predefined port number, the predefined hardware address and predefined port number previously known to support a RDMA operation (Craddock, Fig.1, [0135, lines 1-5], where attempt has made to read data and [0051, lines 1-13], where subnet manager is configuring physical ports and local address, which is used for read and write operations and Fig.1, [0009], where predefined is specific addresses for read and write defined before the read and write operation and further it is merely a well known teaching in the art that specific ports are used for specific traffic, e.g. http traffic go through port 80, LDP=389, Https=443, SIP=5060 etc); and

(b) performing, in response to a successful step (a), a first remote direct memory access write operation directed to the predefined hardware address and the predefined port number (Craddock, [0142, lines 1-16], where attempt has made to write data and [0051, lines 1-13], where subnet manager is configuring physical ports and local address, which is used for read and write operations).

Craddock however is silent on disclosing explicitly, "initiating a peer-to-peer communication session".

Prakash discloses, initiating a peer-to-peer communication (Prakash, Col.3, lines 22-25, where to be aware of the status of peer systems a periodic polling is done which is equivalent to initiating a peer-to-peer communication),

Therefore it would have been obvious to one of ordinary skilled in the art at the time the invention was made to combine the teachings of Craddock with the teachings

of Prakash in order to provide a cluster monitoring system which uses a multicast ISM to receive a status request message from a performance monitoring OSM and to issue multicast status request messages for the entire SAN cluster to determine healthy and unhealthy statuses of systems in a cluster.

15. Claim 16, is rejected for the same rationale as applied to claim 15 above.

16. As to claim 17, Craddock and Prakash disclose, the invention substantially as in parent claim 15, including, wherein the predefined hardware address comprises a fiber channel identifier (Craddock, [0051, lines 11-13], where channel adaptor is fiber channel and configuring means it must have the reference number or MAC address could be the channel ID for configuration purposes).

17. As to claim 18, Craddock and Prakash disclose, the invention substantially as in parent claim 15, including, wherein the predefined port number comprises a virtual interface (Craddock, [0051, lines 1-13], where VL's are virtual interface and has a unique port number assigned).

18. As to claim 19, Craddock and Prakash disclose, the invention substantially as in parent claim 15, including, wherein the first remote direct memory access is delivered to a predefined memory address storing booting status information (Craddock, [0135, lines 1-5], where memory space is reserved for read operation and invoking can be interpret as booting).

19. Claim 1-3, 13-14 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Craddock in view of Pandya et al (Pub. No.: US 2004/0037319 A1),hereinafter "Pandya"

20. As to claims 1 and 35 (method and program product), Craddock discloses the invention substantially, including, a method for initiating a peer-to-peer communication session, the method comprising the steps of:

attempting a first remote direct memory access (RDMA) read operation directed to a cluster partner (Craddock, Fig.1, [0135, lines 1-5], where attempt has made to read data);

performing, in response to a successful first RDMA read operation, a first RDMA write operation to the cluster partner (Craddock, [0142, lines 1-16], where attempt has made to write data).

Craddock however is silent on disclosing explicitly performing, in response to a successful RDMA write operation, a second RDMA read operation directed to the cluster partner and performing in response to a successful second RDMA read operation, a second RDMA write operation to the cluster partner.

Pandya however discloses, performing, in response to a successful RDMA write operation, a second RDMA read operation directed to the cluster partner and performing in response to a successful second RDMA read operation, a second RDMA write operation to the cluster partner (Pandya, Fig.37, element-3706, 3708, [0142], where multiple read request is generated against a write command and it will be obvious therefore to repeat the read or write process according to Fig.37).

Therefore, using the rationale for read and write step above it would have been obvious to one ordinary skilled in the art at the time the invention was made to combine the teachings of Craddock with the teaching of Pandya in order to provide classification of network traffic that consumes up to half of the processing cycles available on packet processors leaving few cycles for deep packet inspection and processing. IP based storage traffic by the nature of the protocol requires high speed low latency deep packet processing and therefore, implementing IP processor significantly reduces the classification overhead by providing a programmable classification engine.

21. As to claim 2, Craddock and Pandya discloses the invention substantially as in parent claim 1, including, wherein the step of attempting a first RDMA read operation further comprises the step of issuing a RDMA read operation to the cluster partner requesting a pre-set memory address location that is associated with a status variable on the cluster partner (Craddock, [0135, lines 1-5], where memory space is reserved for read data and [0137, lines 1-9], where details of the pre-set memory can be observed).

22. As to claim 3, Craddock and Pandya disclose the invention substantially as in parent claim 1, including, exchanging a set of peer connection information (Craddock, [0005, lines 1-4], where nodes are peer communicating with each other);

passing a set of client information to the cluster partner (Craddock, [0077, lines 3-5]);

creating a set of appropriate communication ports (Craddock, [0034, lines 8-9]);

alerting the cluster partner of a ready status (Craddock, [0132, lines 1-3], where response could be an alert message); and

alerting a set of clients that the cluster partner is in a ready state (Craddock, Fig.12, element-passive side, where communication management reply message is used to accept the connection which could be a ready status).

23. As to claim 13, is rejected for the same rationale as applied to claim 1 above and further it will be an obvious modification in a cluster environment to one of ordinary skilled in the art to distribute two operations as single operation to two machines.

24. As to claim 14, Craddock and Pandya discloses, the invention substantially as in parent claim 13, including, wherein the first remote direct memory access read operation is performed over a Virtual Interface connection having a pre-determined and pre-assigned Virtual Interface Number and a pre-determined Fiber Channel ID (Craddock, Fig.3A, [0050, lines 1-4], where verb interface can be interpret as virtual interface and [0051, lines 1-13], where each virtual lane has its own flow control and each VL has its own ID which could be relate to virtual interface number or ID and fiber channel ID can referred to as host channel adaptor element-300).

25. Claims 4-9, are rejected under 35 U.S.C. 103(a) as being unpatentable over Craddock and Prakash as applied to claims 1-3 above in view of Costello et al. (Pub. No.: US 2003/0078946 A1), hereinafter "Costello".

Art Unit: 2152

26. As to claim 4, Craddock and Prakash disclose, the invention substantially as in parent claim 3. However, Craddock and Prakash are silent on wherein the set of peer connection information comprises a version number. Costello, however discloses, wherein the set of peer connection information comprises a version number (Costello, Abstract, lines 3-6, where version number is acquired by the leader node).

Therefore, it would have been obvious to one ordinary skilled in the art at the time the invention was made to combine the teachings of Craddock and Prakash with the teachings of Costello in order to provide a cluster of computer system nodes share direct read/write access to storage devices via a storage area network using a cluster system (Costello, Abstract).

27. As to claim 5, Craddock, Prakash and Costello discloses, the invention substantially as in the parent claim 1 above, including, collecting from a set of clients, the set of client information (Costello, [0084, lines 1-13], where client configuration information is collected); and

transferring the collected set of client information to the cluster partner (Costello, [0084, lines 1-13], where server/cluster partner collects the client information).

28. As to claim 6, Craddock, Prakash and Costello discloses, the invention substantially as the parent claim 5, including, wherein the client information comprises a number of communication ports required (Costello, [0083, lines 1-9], where node could be interpret as communication port).

29. As to claim 7, Craddock, Prakash and Costello discloses, the invention substantially as the parent claim 5, including, wherein the set of client information further comprises an amount of memory requested by a particular client (Costello, [0069, lines 1-25, where each client carries a token which let him use the specific amount of memory from system memory or cache).

30. As to claim 8, Craddock, Prakash and Costello discloses, the invention substantially as the parent claim 1, including, wherein the cluster partner is a storage system (Craddock, Fig.1, element-116, [0009, lines 1-3], where SAN is a storage system).

31. As to claim 9, Craddock, Prakash and Costello discloses, the invention substantially as the parent claim 1, including, wherein the cluster partner is an application server (Costello, [0008, lines 1-6]).

32. Claims 10-12, 20-31 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Craddock and Prakash as applied to claims 15-19 in view of Sutherland et al. (Pub. No.: US 2002/0114341 A1), hereinafter "Sutherland".

33. As to claim 10, Craddock discloses the invention substantially. However, Craddock is silent on a "to initiate a peer-to-peer communication session with a cluster partner".

Prakash however discloses, "to initiate a peer-to-peer communication session with a cluster partner" (Prakash, Col.3, lines 22-25, where to be aware of the status of

peer systems a periodic polling is done which is equivalent to initiating a peer-to-peer communication),

Craddock and Prakash however are silent on disclosing explicitly, “a cluster connection manager”.

Sutherland, however discloses, a cluster connection manager (Sutherland, Abstract, lines 12-16, where, storage coordinator manager initiates and distributes the processing data among selected nodes).

Therefore, it would have been obvious to one ordinary skilled in the art at the time the invention was made to combine the teachings of Craddock and Prakash as cited for claims 1, 15 and 16 and incorporate with the teachings of Sutherland in order to provide a peer-to-peer storage system including a storage coordinator that centrally manages distributed storage resources in accordance with system policies administered through a central administrative console.

34. Claims 20, 24, 27-28 and 31, are rejected for the same rationale as applied to claim 10 above.

35. As to claim 11, Craddock, Prakash and Sutherland discloses, the invention substantially as in parent claim 10, including, means for performing a remote first direct memory access (RDMA) read operation directed to a cluster partner (Craddock, Fig.1, [0135, lines 1-5], where device 1429 is a mean to perform read function);

means for performing, in response to a successful first RDMA read operation, a first RDMA write operation to the cluster partner (Craddock, [0142, lines 1-16], where

Art Unit: 2152

element 1432 is a mean for performing writing function). Using the rationale for read and write step it would have been obvious to one ordinary skilled in the art at the time the invention was made to modify the teachings of Craddock to repeat the steps more than one time in order to provide a distributed data processing system for processing storage I/O in a system area network. In addition the process can be used in a peer-to-peer storage system uses a storage coordinator that centrally manages distributed storage resources in accordance with system policies administered through a central administrative console.

36. As to claim 12, Craddock, Prakash and Sutherland discloses, the invention substantially as in parent claim 11, including, means for exchanging a set of peer connection information ([0004, lines 1-4]);

means for passing a set of client information to the cluster partner (Craddock, [0077, lines 3-5]);

means for creating a set of appropriate communication ports (Craddock, [0034, lines 8-9];

means for alerting the cluster partner of a ready status (Craddock, [0132, lines 1-3], where response could be an alert message); and

means for alerting a set of clients that the cluster partner is in a ready state (Craddock, Fig.12, element-passive side, where communication management reply message is used to accept the connection which could be a ready status).

Art Unit: 2152

37. As to claim 21, Craddock, Prakash and Sutherland discloses, the invention substantially as in parent claim 20, including, wherein the reliable peer-to-peer connection is established without requiring a storage operating system executing on each storage system partner to be fully functioning (Sutherland, Abstract, lines 17-20], where in operations are not interrupted if any of the cluster storage coordinators should fail).

38. As to claims 22, 25 and 29, Craddock, Prakash and Sutherland discloses, the invention substantially as in parent claims 20, 24 and 28, including, wherein the peer-to-peer connection is a virtual interface connection (Craddock, Fig.3A, [0050, lines 1-4], where verb interface is virtual interface)

39. As to claims 23, 26 and 30, Craddock, Prakash and Sutherland discloses, the invention substantially as in parent claims 20, 24 and 28, including, wherein the peer process is a cluster connection client that requests services from the cluster connection manager (Sutherland, Abstract, lines 14-47, where users requesting for files are clients).

40. Claim 32 is rejected under 35 U.S.C 103(a) as being unpatentable over Craddock, Prakash and Sutherland in view of "what was well known in the art".

41. As to claim 32, Craddock discloses the invention substantially, including, wherein information comprises signal (Craddock, [0154], where signal is use to ensure all work completed successfully which is an information). Craddock however is silent on using heartbeat signal.

Official Notice (see MPEP ' 2144.03 Reliance on "Well Known" Prior Art) is taken that was well known in the art to get the advantage of having alert or warning system in place in parallel processing or cluster processing by using by using heartbeat signals e.g. processors status or job completed or request for another job. Examiner Further cites heartbeat signals can also be use for newly added device detection in a parallel processing, Cluster environment and SAN system.

Therefore, it would have been obvious to one of skilled in the art at the time the invention was made to combine the teachings of Craddock, Prakash and Sutherland with "what is well known in the art" at the time the invention was made to provide a monitoring system in a cluster environment implementing the technique to update of poll the status of peer devices.

42. Claim 33 is rejected under 35 U.S.C 103(a) as being unpatentable over Craddock and Pandya in view of Boyd et al (Pub. No.: US 2004/0049600 A1), hereinafter "Boyd".

43. As to claim 33, Craddock and Sutherland disclose the invention substantially including, initializing a first remote direct memory access read operation directed to a specific cluster partner, using a specific port number and a specific address that support RDMA operations (Craddock, Fig.1, [0135, lines 1-5], where attempt has made to read data and [0051, lines 1-13], where subnet manager is configuring physical ports and local address, which is used for read and write operations and Fig.1, [0009], where predefined is specific addresses for read and write defined before the read and write

Art Unit: 2152

operation and further it is merely a well known teaching in the art that specific ports are used for specific traffic, e.g. http traffic go through port 80, LDP=389, Htpps=443, SIP=5060 etc),

Craddock however is silent on disclosing, "Performing a second RDMA read operations directed to a specific cluster partner, using a specific number and specific address that support a RDMA operation.

Pandya however discloses, performing a second RDMA read operations directed to a specific cluster partner, using a specific number and specific address that support a RDMA operations (Pandya, Fig.37, element-3706, 3708, [0142], where multiple read request is generated against a write command and it will be obvious therefore to repeat the read or write process according to Fig.37),

Craddock and Pandya however are silent on disclosing, virtual interface layers initialization.

Boyd however discloses, virtual addresses mapped to physical addresses via address translation table (Boyd, Fig.12, element-1206, 1216, 1214, [0113], where Address translation tables 1204 contain the information used to convert a virtual address provided in WQE data segment 1206 into a list of one or more real addresses of pages making up a data buffer within a memory region, such as memory region 1210),

Therefore it would have been obvious to one of ordinary skilled in art at the time the invention was made to combine the teachings of Craddock and Pandya with the teachings of Boyd in order to provide a method for accessing previously registered

memory regions by incoming requests by utilizing a tag table to associate the request to with either a physical or virtual address.

44. Claim 34 is rejected under 35 U.S.C 103(a) as being unpatentable over Craddock, Pandya and Boyd in view of Sutherland.

45. As to claim 34 is rejected for same rationale as claim 33 above. In addition to the cited rationale for claim 33, Sutherland discloses,

a storage system (Sutherland, Fig.1, Abstract, where peer to peer storage system is disclosed),

a cluster connection manager executing on the storage system (Sutherland , Fig.2, element-12, Abstract, where peer to peer storage system includes a storage coordinator performing the equivalent function of cluster connection manager that centrally manages distributed storage resources in accordance with system policies).

Examiner's Note: Examiner has cited particular columns and line numbers in the references, as applied to the claims above for the convenience of the applicant.

Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in its entirety as potentially teaching of all or part of the claimed invention, as well as the context.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TAUQIR HUSSAIN whose telephone number is (571)270-1247. The examiner can normally be reached on 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on 571 272 3913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/T. H./
Examiner, Art Unit 2152

/Bunjob Jaroenchonwanit/
Supervisory Patent Examiner, Art Unit 2152